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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,082

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Jacques Fonkenell

BEAUMONT-36

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EXAMINER

NGUYEN, NINH H

ART UNIT

PAPER NUMBER

3745

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,082	<b>Applicant(s)</b> FONKENELL, JACQUES	
	<b>Examiner</b> Ninh H. Nguyen	<b>Art Unit</b> 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>05/18/06</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3, 9, and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1 and 9 each only recites a hydroelectric power plant comprising a helix shape wheel with a ratio of kinetic energy of the water flow coming out of the wheel and the potential energy of the head being smaller than 20%. For a given head, there have to be specific structures of the power plan such as, wheel and hub dimensions, blade shape and angles, shapes and dimensions of the housing, operating conditions that will result in a specific kinetic energy of the water flow coming out from the wheel such that the ratio of the same and the potential energy of the head being smaller than 20%. Without further information, a person in the art would not know how to make and use of the invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for citing a narrow range within a broad range.

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5. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claims 1 and 9 each recites the broad recitation of the head is lower than 10 meters, and the claim also recites 1 to 5 meters which is the narrower statement of the range/limitation.

6. Claims 2-8 are indefinite as depending on claim 1, and claim 10 is indefinite as depending on claim 9.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Pham-Phu (4,764,087).

Pham-Phu discloses a low head vertical axis Kaplan turbine for less than 10 meters (col. 1 lines 10-15) comprising a helix wheel 1;

Regarding claim 2, Pham-Phu further discloses the relationship between the head H and the turbine diameter d as  $H = 1.4 d$  (col. 2, lines 55-58). Therefore, for a 5 meters head, the diameter of the wheel d is about 3.6 meters.

9. Claims 1, 2, 4, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Gutierrez Atencio (4,468,153).

Gutierrez Atencio discloses a low head turbine for 1.5 - 10 meters (col. 2 lines 37-39) comprising a helix wheel 2' (Fig. 1); wherein the diameter of the turbine can be greater than 10 meters (col. 1, lines 67-68); wherein for low head operations it is advantageous a large diameter turbine rotating at low speed (col. 2, lines 1-8).

Regarding claim 4, Gutierrez Atencio discloses a carter 18 crossed by an opening (Fig. 1) comprising a cylindrical portion, the wheel 2' comprising blades arranged at the level of the cylindrical portion; a hub on which the blades are assembled; a fixed box 4, the hub being rotatably assembled on the fixed box; and a distributor 5 upstream of the wheel with respect to the water flow and comprising profiles connecting the fixed box to the carter.

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Regarding claim 5, Gutierrez Atencio discloses the opening comprises a converging portion upstream of the cylindrical portion with respect to the water flow and a diverging portion (68) downstream of the cylindrical portion with respect to the water flow, the ratio between the thickness of the carter according to the rotation axis (D) of the wheel and the wheel diameter being smaller than 0.5.

Regarding claim 8, Gutierrez Atencio discloses a hydraulic pump 10 driven by the wheel (col. 8, lines 9-20).

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gutierrez Atencio. Gutierrez Atencio discloses all the limitations except the rotation speed of the wheel is not less than 50 rpm as claimed.

Since it is known that a low head turbine should have a large diameter and slow rotational speed, it would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the turbine of Gutierrez Atencio with the rotation speed of the wheel being less than 50 RPM to satisfy design requirements.

12. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pham-Phu in view of Mayo et al. (4,648,244 which is referred to as Mayo from now on).

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Pham-Phu discloses all the limitations including a hub on which the blades are assembled (Fig. 1), a fixed box 2, the hub being rotatably assembled in the fixed box, and distributor 3. However, Pham-Phu does not disclose a carter crossed by an opening comprising a cylindrical portion, the wheel comprising blades arranged at the level of the cylindrical portion; and a distributor upstream of the wheel with respect to the water flow and comprising profiles connecting the fixed box to the carter as claimed.

Mayo teaches a bulb turbine comprising a carter 31 crossed by an opening (Fig. 1) comprising a cylindrical portion, a wheel comprising blades arranged at the level of the cylindrical portion; a hub 27 on which the blades are assembled; a fixed box 32, the hub being rotatably assembled on the fixed box; and a distributor 33 connecting the fixed box to the carter.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the turbine of Pham-Phu with the carter of Mayo such that the distributor 3 connecting the fixed box to the carter for the purpose of providing a housing for the wheel and to support the same.

Regarding claim 5, Mayo teaches the opening comprises a converging portion (Fig. 1) upstream of the cylindrical portion with respect to the water flow and a diverging portion (Fig. 1) downstream of the cylindrical portion with respect to the water flow, the ratio between the thickness of the carter according to the rotation axis of the wheel and the wheel diameter being smaller than 0.5 (judging from Fig. 1).

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pham-Phu in view of Baumann (2,015,332).

Pham-Phu discloses all the limitations except means for orienting the blades as claimed.

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Baumann teaches a Kaplan turbine comprising an impeller having a hub 14, a plurality of blades 57 with means for orienting the blades (page 2, left column, lines 29-39).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the turbine of Pham-Phu with means for orienting the blades of Baumann for the purpose of improving efficiency of the turbine.

### ***Allowable Subject Matter***

14. Although claim 1-3 are rejected under 35 U.S.C. § 112, first paragraph as being non-enablement, combination of claims 1-4 and 6 would certainly results in an enabled and allowable claim given that the 35 U.S.C. § 112, second paragraph issue of claim 1 is satisfactorily resolved.

### ***Prior Art***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 3 patents.

Kao (4,441,029), Chappell et al. (4,258,271), and Fevre (2,897,375) are cited to show different water turbines.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).

/Ninh H. Nguyen/  
Primary Examiner, Art Unit 3745

Nhn  
2/18/2010